Math 240 - Quiz 4

September 30, 2021

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due October 5.

1. (2.5 points) Given that $y(x) = xe^x$ is a particular solution of

$$y'' - y' - 12y = (1 - 12x)e^x,$$

find the general solution.

2. (2.5 points) Find two linearly independent solutions of

$$y'' + 12y' + 36y = 0.$$

Compute the Wronskian to show that your solutions are independent.

Turn over.

3. (2.5 points) Solve: $\dfrac{d^4y}{dx^4} - \dfrac{d^2y}{dx^2} = 0$

4. (2.5 points) Solve: $y'' - 4y' + 13y = 0; \quad y(0) = 1,\ y'(0) = 5$